

Name: \_\_\_\_\_

### at1118paper: Complete the Square (v403)

#### Example

By completing the square, find both solutions to the given equation:

$$x^2 - 58x = -837$$

Add  $(\frac{-58}{2})^2$ , which equals 841, to both sides of the equation.

$$x^2 - 58x + 841 = 4$$

Factor the left side.

$$(x - 29)^2 = 4$$

Undo the squaring. We need to consider both  $\pm\sqrt{4}$ .

$$x - 29 = -2$$

or

$$x - 29 = 2$$

$$x = -31$$

or

$$x = -27$$

#### Question 1

By completing the square, find both solutions to the given equation:

$$x^2 + 28x = 128$$

#### Question 2

By completing the square, find both solutions to the given equation:

$$x^2 - 56x = -775$$

**Question 3**

By completing the square, find both solutions to the given equation:

$$x^2 - 40x = 441$$

**Question 4**

By completing the square, find both solutions to the given equation:

$$x^2 + 50x = -429$$

**Question 5**

By completing the square, find both solutions to the given equation:

$$x^2 + 22x = 455$$

**Question 6**

By completing the square, find both solutions to the given equation:

$$x^2 + 46x = -528$$